



Department of Energy

Washington, DC 20585

QA: N/A

OCT 23 2002

MEMORANDUM FOR: Catherine E. Hampton, YMSCO/OPE

FROM: R. Dennis Brown, Director, *James Blaylock*
Office of Quality Assurance

SUBJECT: Evaluation of Initial and Complete Response to, Verification of
Corrective Action and Closure of Deficiency Report (DR)
YMSCO(V)-02-D-157 Resulting from an Office of Quality
Assurance (OQA) Surveillance OQA-02-S-20

The OQA staff has evaluated the initial and complete response and verified the corrective action of DR YMSCO(V)-02-D-157 and determined the results to be satisfactory. As a result, the DR is considered closed.

Verification confirms that there was no impact on the Calibration Services Work provided by MTS Systems Corporation on waste isolation or safety.

If you have any questions, please contact either James Blaylock at (702) 794-1420 or Donald J. Harris at (702) 794-1467.

OQA:JB-0160

Enclosure:
DR YMSCO(V)-02-D-157

cc w/encl:

N. K. Stablein, NRC, Rockville, MD
Robert Latta, NRC, Las Vegas, NV (2 cys)
S. W. Lynch, State of Nevada, Carson City, NV
L. W. Bradshaw, Nye County, Pahrump, NV
W. J. Glasser, NQS, Las Vegas, NV
D. J. Harris, NQS, Las Vegas, NV
D. G. Opielowski, NQS, Las Vegas, NV
J. R. Dyer, DOE/YMSCO, Las Vegas, NV
K. D. Lachman, DOE/YMSCO, Las Vegas, NV
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*NMSS 07
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ORIGINAL

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**OFFICE OF CIVILIAN
RADIOACTIVE WASTE MANAGEMENT
U.S. DEPARTMENT OF ENERGY
WASHINGTON, D.C.**

8. ☒ DEFICIENCY REPORT
☐ CORRECTIVE ACTION REPORT
 NO. YMSCO(V)-02-D-157
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 QA: QA

DEFICIENCY REPORT/CORRECTIVE ACTION REPORT

1. Controlling Document: (Document ID and Revision or Date) DOE/RW-0333P, Rev. 11, Quality Assurance Requirements and Description (QARD)		2. Related Report No.: OQA-02-S-20
3. Responsible Organization: MTS System Corporation (MTS)	4. Discussed With: Catherine E Hampton, James F. Goodwin, and Kevin J. Rust	
5. Requirement 1) 4.2.1 C 2 A requirement for the supplier to incorporate the appropriate QARD requirements into any subtier supplier-issued procurement document. 2) 7.2.2 Source Evaluation and Selection A. Supplier selection shall be based on an evaluation, performed before the contract is awarded, of the supplier's capability to provide items or services in accordance with procurement document requirements		

(Continued on page 2)

6. Description of Condition:

Contrary to cited requirement #1, the Quality Management System (QMS) procedure #0261, Rev. 11, "Metrology Subcontractor Approval," fails to specifically include a requirement to incorporate quality requirements into purchase documents to subtier suppliers.

Contrary to cited requirement #2, the QMS procedure #0261, Rev. 11, fails to provide the methodology to qualify a supplier based on the supplier's history, or the qualification of a supplier with no previous history with MTS. In addition, the results of the source evaluation and selection methodology is required to be proceduralized and the results documented.

Has work been stopped? ☐ Yes ☒ No

7. Initiator Donald J. Harris Printed Name Signature Date 7/16/02	9. Does a stop work condition exist? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> N/A If Yes, Check One: <input type="checkbox"/> A <input type="checkbox"/> B <input type="checkbox"/> C <input type="checkbox"/> D
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10. Recommended Actions

11. QA Review DONALD J. HARRIS Printed Name Signature Date 7/16/02	12. Response Due Date: 10 Working Days after Issuance
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13. QAM Issuance Approval.
 Printed Name RAM B. MURPHY Signature Date 8/7/02

14. Corrective Actions Verified/Closure DONALD J. HARRIS QAR Printed Name Signature Date 10/7/02	15. QAM Closure Approval R DENNIS BROWN Printed Name Signature Date 10/23/02
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☒ DR/CAR/QO

☐ SWO

NO. YMSCO(V)-02-D-157

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CONDITION ADVERSE TO QUALITY CONTINUATION PAGE

5. Requirement: (Continued)

C. Measures for evaluating and selecting procurement sources shall include one or more of the following elements:

1. Evaluation of the supplier's history for providing an identical or similar product which performs satisfactorily in actual use.
2. Evaluation of supplier's current QA records supported by any documented qualitative and quantitative information.

D. The results of procurement source evaluation and selection shall be documented.

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- 2 Check if Amended ☐
Check if also Initial Response ☒
3 Extended Processing
☐ No ☐ Yes (If yes, submit
Extended Processing request)

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1. DR/CAR NO. MS000002-D-157
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DEFICIENCY REPORT/CORRECTIVE ACTION REPORT COMPLETE RESPONSE

4. Extent of Condition: (Amended response will be required if all Extent of Condition investigations are not complete and documented herein)
See Attached

5. Impact (Provide an impact statement relative to waste isolation and safety, and impact to other work, if any)
See Attached

6 Remedial Actions: (Document all actions necessary to address the results of the Extent of Condition)
See Attached

7. ☐ Root Cause (For a significant CAQ, attach results of formal root cause determination prepared in accordance with AP-16.4Q)
☒ Apparent Cause
See Attached

8. Action to Preclude Recurrence: (Address those actions necessary to prevent the identified cause from recurring)
See Attached

9 Due Date for Completion of Corrective Action
9/25/02

10 Responsible Manager
Catherine Hampton *Catherine Hampton* 09/26/02
Printed Name Signature Date

11 QAR Evaluation: ☒ Accept ☐ Partially Accept ☐ Reject
☐ Re-evaluated for significance

12. QAM Concurrence:

DONALD S. HARRIS *Donald S. Harris* 10/9/02
Printed Name Signature Date

R. DEAN BROWN *R. Dean Brown* 10/23/02
Printed Name Signature Date



MTS Systems Corporation
14000 Technology Drive
Eden Prairie, MN 55344-2290
Telephone 952-937-4000
Fax 952-937-4515

16-Sep-02

Deborah G. Opielowski
Navarrow Quality Services
P.O. Box 364629
Mail Stop 455
North Las Vegas, Nevada 89036-8629

OQA Surveillance OQA-02-S-20, DR YMSCO(V)-02-D-157

Deborah:

Enclosed you will find the updated procedures and associated responses resulting from the recent quality audit of MTS Systems Corporation. The actions taken in response to the associated Deficiency Report/Corrective Action Report OQA-02-S-20 are summarized below.

Requirement #1:

MTS QMS 261 has been revised (Rev. 12) to include instructions for incorporating the quality and technical requirements into purchase orders issued to calibration subcontractors. In addition, MTS Metrology Procedure #1070 has been revised (Rev. K) to reflect these changes and further support the subcontractor selection and approval process.

Requirement #2:

MTS QMS 261 has been revised (Rev. 12) to further expand and explain the methodology used by the MTS Metrology Laboratory when qualifying calibration subcontractors, evaluating subcontractor performance/compliance and documenting results. In addition, MTS Metrology Procedure #1070 has been revised (Rev. K) to reflect these changes and further support the subcontractor selection, approval, evaluation and documentation process.

The MTS Metrology Laboratory quality system is accredited by A2LA (American Association for Laboratory Accreditation) for meeting the requirements of ISO/IEC 17025 - 1999 in addition to ANSI/NCSL Z540-1-1994. Please contact me for additional information regarding the MTS Metrology Laboratory or visit our web site at www.mts.com/services/metrology.

Sincerely,

A handwritten signature in black ink, appearing to read "Kevin J. Rust".

Kevin J. Rust
Metrology Laboratory
MTS Systems Corporation
952-937-4208

Enclosure:
MTS QMS 261 (Rev. 12)
MTS Procedure 1070 (Rev K.)

Metrology Subcontractor Approval Procedure

Purpose:

This procedure ensures MTS measuring and test equipment are calibrated by qualified subcontractors who can demonstrate objective evidence of meeting specific industry standards for calibration services and traceability required by MTS. Calibration subcontractors supporting our Scope of Accreditation shall have evidence of achieving laboratory accreditation to ISO 17025. Calibration subcontractors who provide calibration services outside our Scope of Accreditation can be accredited or non-accredited. This process defines the measures to control both classifications of calibration subcontractors; accredited and non-accredited.

Approvals

Owner: Chuck Madden

Title: Manufacturing Operations Manager

First Implemented

08/08/94

Change History

Rev 12	09/10/02	Changed to incorporate subcontractor quality and technical requirements on purchase orders, subcontractor evaluations, and some minor word changes.
Rev 11	05/08/02	Changed owner from Gaylord DeGroot to Chuck Madden and changed Title. Change references to Quality Manager to Operations Manager.

Metrology Subcontractor Approval Procedure

#0261

Rev 10	12/17/01	Changed to incorporate ISO 17025 requirements and provisions of external customers.
Rev 09	02/25/99	Changed to emphasis the need for subcontractors to be accredited to ISO Guide 25 per the requirements of QS9000 3 rd edition.
Rev 08	12/11/97	Minor wording changes noted along with A2LA and NVI.AP reference for approval.
Rev 07	07/01/96	Clarified item 2 of Third Party Subcontractor Evaluation section to specify what parts to fill in on list.
Rev 06	05/16/96	Clarification of quality records.
Rev 05	11/16/95	Complete rewrite of Procedure section. Added Metrology Manager to Responsibility section.
Rev 04	06/19/95	Item 5, par. 1 - added Metrology Audit Finding form ID number. Item 5, par 3 - revised reference to discrepancies found during survey.
Rev 03	05/25/95	Added reference to the MTS Metrology Survey Log. Revised Approved Supplier audit schedule.
Rev 02	11/01/94	Added QMS Doc Number to Related Documents section
Rev 01	08/08/94	Placed into control

Metrology Subcontractor Approval Procedure

#0261

Purpose

This procedure ensures MTS measuring and test equipment are calibrated by qualified subcontractors who can demonstrate objective evidence of meeting specific industry standards for calibration services and traceability required by MTS. Calibration subcontractors supporting our Scope of Accreditation shall have evidence of achieving laboratory accreditation to ISO 17025. Calibration subcontractors who provide calibration services outside our Scope of Accreditation can be accredited or non-accredited. This process defines the measures to control both classifications of calibration subcontractors; accredited and non-accredited.

Scope

This procedure applies to the Metrology Department when subcontracting calibration work. This procedure includes all measuring and test equipment, either sent to subcontractors for calibration, or coming on-site to perform calibration.

Suppliers who provide us consumable materials are identified in procedure 1439. This shows the list of critical materials that could impact calibration results and the approved source of those supplies.

Process Overview

Prior to subcontracting calibration, the Metrology Technician evaluates candidate subcontractors' ability to conform to MTS quality, technical, and traceability requirements.

The subcontractor is evaluated using one of three methods: 1) The evaluation of the subcontractor has been made and accepted by achieving laboratory accreditation by recognized accreditation organizations such as the American Association for Laboratory Accreditation (A2LA) or the National Voluntary Laboratory Accreditation Program (NVLAP). 2) The evaluation has been made and accepted by achieving ISO 9000 certification. 3) Subcontractor is required to complete and return the MTS Metrology "Survey and Checklist".

When calibration is subcontracted, the MTS Metrology Technician includes the calibration quality system and technical requirements on the MTS Purchasing Service Request (PSR) form for incorporation into the MTS Purchase Order issued to the subcontractor.

After calibration, subcontractor performance is evaluated for compliance to MTS Metrology quality and technical requirements.

Metrology Subcontractor Approval Procedure

#0261

Procedure

1. The MTS Metrology Survey Log is filled in appropriately. The Metrology Technician initiates the MTS Metrology "Survey and Checklist" form for each candidate subcontractor.
2. The subcontractor is audited using one of the three evaluation methods subtitled below.
3. The Operations Manager for Metrology reviews and signs the completed survey.
4. After calibration, subcontractor compliance is evaluated using the "Calibration Subcontractor Evaluation" form. Completed forms are kept on file for historical reference of subcontractor performance.

Accredited Subcontractors

1. The Metrology Technician obtains a copy of the subcontractor's accreditation certificate and scope stating their calibration system is in compliance with ISO 17025. The documentation must show current accreditation by a recognized accreditation organization.
2. The scope of accreditation is reviewed to ensure the technical capabilities and associated uncertainties are adequate for our needs.
3. The top portion of the "Survey and Checklist" form is completed by the Metrology Technician and forwarded to the Operations Manager for review and signature (Quality Record #35).
4. The "Survey Log" entries are completed.
5. Audit documentation for the subcontractor is kept on file by subcontractor name.
6. The "Calibration Subcontractor List" (part of Metrology procedure #1070) is reviewed and updated.
7. When calibration is subcontracted, the MTS Metrology Technician includes the calibration quality system and technical requirements on the MTS Purchase Service Request (PSR) form per procedure #1070. These requirements are incorporated into the MTS Purchase Order issued to the subcontractor.
8. After calibration, a "Calibration Subcontractor Evaluation" form is completed by the Metrology Technician per procedure #1070. Completed forms are kept on file for historical reference of subcontractor performance.

Metrology Subcontractor Approval Procedure

#0261

9. The accreditation status of the subcontractor is reviewed prior to next use or the expiration date stated on their certificate and updated accordingly.

ISO 9000 Certified Subcontractors

1. The Metrology Technician obtains a copy of the subcontractor's ISO 9000 certificate. The documentation must show current certification by a recognized ISO certification organization.
2. The top portion of the "Survey and Checklist" form is completed by the Metrology Technician and forwarded to the Operations Manager for review and signature (Quality Record #35).
3. The "Survey Log" entries are completed.
4. Audit documentation for the subcontractor is kept on file by subcontractor name.
5. The "Calibration Subcontractor List" (part of Metrology procedure #1070) is reviewed and updated.
6. When calibration is subcontracted, the MTS Metrology Technician includes the calibration quality system and technical requirements on the MTS Purchase Service Request (PSR) form per procedure #1070. These requirements are incorporated into the MTS Purchase Order issued to the subcontractor.
7. After calibration, a "Calibration Subcontractor Evaluation" form is completed by the Metrology Technician per procedure #1070. Completed forms are kept on file for historical reference of subcontractor performance.
8. The certification status of the subcontractor is reviewed prior to next use or the expiration date stated on their certificate and updated accordingly.

Non-Accredited / Non- ISO Certified Subcontractors

1. The "Survey and Checklist" is sent to the candidate subcontractor with instructions for the subcontractor to complete and return.
2. Upon return, the completed survey responses are evaluated in order to determine the adequacy of the subcontractor to meet our requirements. This determination is at the discretion of the Metrology Technician and Operations Manager.
3. Documenting deficiencies using the Metrology Audit Finding form (Quality Record #32) and pursuing approval of the subcontractor is left

Metrology Subcontractor Approval Procedure

#0261

to the discretion of the auditor. If value is added by pursuing approval, the Metrology Audit Finding form is sent within 10 working days to the subcontractor for a response and completion of the correction action portion of the form.

4. The Metrology Technician makes an evaluation of the corrective action documented by the subcontractor and initiates a follow-up inquiry to verify adequacy for closure of the Metrology Audit Finding (Quality Record #32).
5. The "Survey and Checklist" form is completed by the Metrology Technician and forwarded to the Operations Manager for review and signature (Quality Record #35).
6. The "Survey Log" entries are completed.
7. Audit documentation for the subcontractor is kept on file by subcontractor name.
8. The "Calibration Subcontractor List" (part of Metrology procedure #1070) is reviewed and updated.
9. When calibration is subcontracted, the MTS Metrology Technician includes the calibration quality system and technical requirements on the Purchasing Service Request (PSR) form per procedure #1070. These requirements are incorporated into the MTS Purchase Order issued to the subcontractor.
10. After calibration, a "Calibration Subcontractor Evaluation" form is completed by the Metrology Technician per procedure #1070. Completed forms are kept on file for historical reference of subcontractor performance.
11. The approval status of the subcontractor is reviewed prior to next use or the expiration of their approved status and updated accordingly.

Responsibilities**Operations Manager**

Reviews and signs completed "Survey and Checklist" forms.

Metrology Subcontractor Approval Procedure

#0261

Metrology Technician

Selects potential candidate subcontractors. Initiates the audit process and evaluates the adequacy and competency of the subcontractor. If applicable, performs follow-up inquiries based on subcontractor evaluations and survey responses. Completes the audit process and periodically reviews and updates the subcontractors approval status

Related Documentation

MTS Metrology Survey Log #0395

Quality Records

Completed forms are filed by supplier name in Metrology. Everyone in the department has access to the file, but the records cannot be removed from the immediate area.

Quality Record #32 - Metrology Audit Finding form #0197

Quality Record #35 - MTS Metrology Survey and Checklist #0304



MTS METROLOGY LABORATORY CALIBRATION PROCEDURE

DEVICE BEING CALIBRATED (manufacturer, model, name)		PROCEDURE NUMBER	
Test and measurement equipment requiring calibration by a subcontractor		1070	
WRITTEN BY	DATE	REVISION	
Kevin J. Rust	09-Sep-02	K	
APPROVED BY	DATE	PAGE	
<i>Chris Maddux</i>	9/13/02	1 of 5	
SPECIFICATIONS OF UNIT UNDER TEST			
Parameter	Specifications	Parameter	Specifications
All applicable parameters	Defined by the OEM, published specifications, or industry standards		
MTS specified parameters and/or requirements	Defined by MTS and/or industry standards		
CALIBRATION STANDARDS REQUIRED			
Description	Specifications	Manufact. / Model	
Subcontractor quality system and calibration requirements	Specific quality system requirements and/or compliance is included on the associated purchase order. Additional calibration data requirements and special instructions are also included on the associated purchase order.		

Remarks:

1. The calibration is valid only for the specifications listed. Other capabilities that the UUT may be capable of performing are not verified.
2. This procedure utilizes the calibration standards listed. Other standards may be used that meet or exceed the listed specifications.

A. Description of unit under test

This procedure describes the method and process to be used when test and measurement equipment is sent to a subcontractor for calibration services.

B. Environmental considerations

Calibration is to be performed within the manufacturer's recommended parameters.

C. Calibration subcontractor preparation and/or process

- 1) Prior to use, the subcontractor shall be approved by the MTS Metrology Laboratory using applicable procedures and listed on the MTS Metrology Calibration Subcontractor List.
- 2) When the Calibration Subcontractor List is updated, the date of the revision is noted on the list. Formal revision changes to procedure 1070 are not required when updates and revisions to the Calibration Subcontractor List are made.
- 3) The Calibration Subcontractor List is included as part of this procedure.

D. Calibration procedure

- 1) The Metrology Technician initiates a MTS Purchasing Services Request (PSR) form.
- 2) The Metrology Technician includes the following technical calibration and measurement traceability requirements statement on the PSR.

Calibrate to OEM specifications and/or MTS specified calibration requirements. The measurement uncertainty of the calibration process and any out of tolerance conditions shall be noted on applicable calibration reports. Calibration reports must state the specific quality assurance standards complied with and provide assurance that measurement results are traceable to NIST.

- 3) In addition, specific calibration subcontractor quality system requirements and/or MTS specified technical requirements are also included on the PSR. Some common examples are shown below.
 - a) *An accredited (A2LA, NVLAP) calibration service in compliance to ISO/IEC 17025 is required.*
 - b) *Calibration reports must include "As Found" and "As Left" calibration data.*
 - c) *A particular subcontractor calibration service (Name and/or Number) is required.*
 - d) *Specific calibration data points and/or instructions can also be included.*
- 4) Submit the completed PSR to the MTS Purchasing Department. The calibration, quality, and technical requirements documented on the PSR will be incorporated into the MTS Purchase Order issued to the subcontractor.
- 5) The Purchasing Department will initiate the purchase order process and deliver appropriate documents to the MTS Metrology Laboratory for shipment of the instrument to the subcontractor.
- 6) Calibration is performed by the subcontractor and the instrument is returned to MTS.
- 7) Upon receipt of the instrument, the Metrology Technician evaluates the documentation and results provided by the subcontractor to determine compliance with the purchase order quality and technical requirements.

- 8) During the evaluation and data review process, the Metrology Technician completes a "Calibration Subcontractor Evaluation Form". Completed forms are kept in the appropriate subcontractor file for historical reference.
- 9) If applicable, non-compliance, discrepancies, and/or questions resulting from the subcontractor evaluation process are directed towards the subcontractor for clarification and/or resolution. Discrepancies shall be noted on the "Calibration Subcontractor Evaluation Form" and related correspondence if applicable.
- 10) Process all applicable calibration documents and enter data into the MTS Metrology Database.
Note: The calibration due date shall be computed from the actual date of calibration and not the date received by MTS.
- 11) Remove all subcontractor calibration labels and attach the appropriate MTS Calibration Label.

MTS METROLOGY LABORATORY CALIBRATION SUBCONTRACTOR LIST

Subcontractor Name and Location	Approval Process and Sub. QA Program	Expiration Date	Calibration Services Provided	Additional Notes / Remarks
Agilent Mountain View, CA	A2LA Accreditation ISO/IEC 17025 ANSI/NCSL Z540-1-1994	May-03	Agilent T&ME	
Englewood, CO	MTS Survey & Checklist	May-04	Agilent T&ME	Does not apply to our A2LA scope
Bruel & Kjaer 2815 Colonnades Court Norcross, GA 30071	A2LA Accreditation ISO/IEC 17025 ANSI/NCSL Z540-1-1994	Sep-03	Accelerometers and Acoustics T&ME	
DII Instruments 4765 East Beautiful Lane Phoenix, AZ 85044	A2LA Accreditation ISO/IEC 17025 ANSI/NCSL Z540-1-1994	Mar-03	Pressure T&ME (> 10,000 psi)	Applies to MTS Service scope
Druck 4 Dunham Drive New Fairfield, CT 06812	ISO 9001	Dec-03	Pressure T&ME (< 5 psi)	Does not apply to our A2LA scope
Edmunds Gages Farmington Industrial Park Farmington, CT 06032	A2LA Accreditation ISO/IEC Guide 25 ANSI/NCSL Z540-1-1994	Dec-02	Ring Gages	
Endevco 30700 Rancho Viejo Road San Juan Capistrano, CA 92675	A2LA Accreditation ISO/IEC 17025 ANSI/NCSL Z540-1-1994	Sep 03	Accelerometers	
FLUKE Everett, WA 98204 Primary Lab and Factory Annex	NVLAP Accreditation ISO/IEC Guide 25 ANSI/NCSL Z540-1-1994	Jun-03	Reference Standards Multifunction Calibrators	
Dallas Service Center Carrollton, TX 75006	A2LA Accreditation ISO/IEC 17025 ANSI/NCSL Z540-1-1994	Jul-04	Multifunction Calibrators	
GTE 3301 Wayntrace Fort Wayne, IN 46806	MTS Survey & Checklist	Dec-02	Tektronix T&ME	Does not apply to our A2LA scope
Hart Scientific 799 E. Utah Valley Dr. American Fork, UT 84003	NVLAP Accreditation ISO/IEC Guide 25 ANSI/NCSL Z540-1-1994	Sep-02	Thermometer / PRT IR Calibrator	
Hedland 2200 South Street Racine, WI 53404	Survey and Checklist	Jun-02	Flow Meters	Does not apply to our A2LA scope
Industrial Automation & Controls 7171 OHMS Lane Edina, MN 55439	Survey and Checklist ISO 9002	Jan-03	Machine Shop Machines	Does not apply to our A2LA scope

Subcontractor Name and Location	Approval Process and Sub. QA Program	Expiration Date	Calibration Services Provided	Additional Notes / Remarks
Lebow 1728 Maplelawn Rd Troy, MI 48084	A2LA Accreditation ISO/IEC Guide 25 ANSI/NCSL Z540-1-1994	Jun-03	Torque Transducers	Accreditation for torque limited to 300K per their current scope.
Lockheed Martin 1111 Lockheed Martin Way Sunnyvale, CA 94088	A2LA Accreditation ISO/IEC Guide 25 ANSI/NCSL Z540-1-1994	Sep-02	Standard Capacitor	
Minnesota Metrology Lab 2277 Highway 36 St. Paul, MN 55113	NVLAP Accreditation ISO/IEC 17025	Dec-02	Reference Weight Sets	
NIST Route 70 S. Quince Orchard Rd Gaithersburg, MD 20760			Force Standards Rotary Table Laser Interferometer	
Norbar 1650A Mansfield St. Santa Cruz, CA 95062	MTS Survey & Checklist	Aug-02	Torque Transducers	
Quality Calibration Services 120205 West Greenfield Avenue West Allis, WI 53214	A2LA Accreditation ISO/IEC Guide 25	Aug-02	Dimensional T&ME	
Ross Engineering 540 Westchester Drive Campbell, CA 95005	Survey and Checklist	Dec-02	High Voltage Divider	Does not apply to our A2LA scope
RS Technologies 24350 Indoplex Circle Farmington Hills, MI 48335	A2LA Accreditation ISO/IEC 17025 ANSI/NCSL Z540-1-1994	Apr-04	Torque Transducers	
Ruska Instruments P.O. Box 630009 Houston, TX 77263	NVLAP Accreditation ISO/IEC 17025	Dec-02	Pressure Standards	
Starrett 24500 Detroit Road Cleveland, OH 44145	NVLAP Accreditation ISO/IEC Guide 25	Dec-02	Gage Blocks	
Surface Plate Div. 1372 Boggs Drive Mount Airy, NC 27030	Survey and Checklist	Jan-03	Granite Squares	Does not apply to our A2LA scope

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CONDITION ADVERSE TO QUALITY CONTINUATION PAGE

Verification and Closure of YMSCO(V)-02-D-157

Block 4: Extent of Condition

Verified the Extent of Condition was limited to MTS's Suppliers listed on the MTS Metrology Laboratory Calibration Subcontractor list (21 suppliers)

Block 5: Impact

Verified that there was no impact on the Calibration Services Work provided by MTS on waste isolation or safety

Block 6: Remedial Actions

Verified that no remedial action was taken by MTS. Action to preclude recurrence resolved the cited condition on pass-down of requirements to sub-tier suppliers, and supplier selection based on suppliers history for providing calibration services

Block 7: Apparent Cause

Verified the MTS procedures; QMS Procedure #0261, Rev. 11, Metrology Subcontractor approval procedure and MTS Metrology Procedure #1070, Rev 1 fail to address the pass-down of requirement to subtier suppliers and fully define the method of quality suppliers based on history of the supplier providing calibration services

Block 8: Action to Preclude Recurrence

1. Verified MTS QMS 0261, Rev. 12, was revised to include instructions for incorporating the Quality and Technical requirements into the purchase order. In addition, MTS Metrology Procedure 1070, Rev K, incorporated these changes
2. Verified MTS QMS 0261, Rev. 12, expanded/and explained the methodology used when qualifying subcontractor, by evaluating, subcontractor performance/compliance and documenting results. Additionally, MTS Metrology Procedure 1070, Rev. K, incorporated these changes.